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REMARKS

Claims 1, 5-20, 24-26, 50-57, 66-74 and 76-84 were pending for the final Office Action dated September 12, 2003. Claims 1, 5-9, 11-20, 24-26, 66-74 and 76 have been allowed. Claims 10, 50-57 and 77-84 stand rejected under various grounds. The Office Action and the cited references have been carefully considered. In light of the amendments presented above and the following remarks, reconsideration and allowance of the subject application are hereby requested.

Claims 10, 50-54, 77, 78 and 81-84 stand rejected under 35 U.S.C. §102(b) as being anticipated by European Patent Application No. 0 841 406 A1. Additionally, claims 55-57, 79 and 80 stand rejected under 35 U.S.C. §103(a) as being unpatentable over European Patent Application No. 0 745 694 A1.

Independent Claim 10

As discussed in Applicant's previous response, with regard to the '406 application, and as illustrated in Figures 3, 13, etc., even assuming *arguendo* that the ladle 10 could be considered a holding vessel and that the vessel 30 is a forming vessel, there is no indication or suggestion that the temperature of the liquid metal contained within the ladle 10 is "controllably adjusted to a selected transfer temperature", as recited in independent claim 10.

On page 5 of the Office Action, it is stated that the '406 application implicitly discloses controlling the selected transfer temperature in that if the transfer temperature is not maintained or controlled, the molten metal might pre-solidify if the temperature is too low.

The Applicant concedes that the molten metal in the ladle 10 will begin to solidify if the

molten metal drops below a certain temperature. However, this temperature drop will be the result of uncontrolled ambient cooling. There is not indication in the '406 application, either expressed or implicit, that teaches that the temperature of the molten metal in the ladle 10 is "controllably adjusted" in any manner. While the temperature of the molten metal in the ladle 10 may vary or change due to the effects of ambient cooling, the temperature of the molten metal is in no way controlled, much less controllably adjusted, to arrive at a selected transfer temperature. Indeed, the '406 application does not even mention a change in temperature of the molten metal while residing in the ladle 10, much less that the temperature of the molten metal is adjusted in a controlled manner to arrive at a selected temperature.

Nevertheless, to provide further clarification regarding the subject matter of the invention and to facilitate allowance of independent claim 10, the Applicant has amended independent claim 10 to recite that the holding vessel is "temperature-controlled". The Applicant submits that it can not fairly be said the ladle 10 is a temperature-controlled vessel. For at least the forgoing reasons, independent claim 10 is distinguishable over the '406 application and any of the other art of record, whether considered along or in combination. Accordingly, withdrawal of the rejection of independent claim 10 is respectfully requested.

Independent claim 50

Independent claim 50 recites, among other features, feeding of semi-solid material from a temperature-controlled vessel directly into a mold for forming into a shaped article. On page 5 of the Office Action, it is asserted that element 180 (shown in Figure 13 of the '406 application) "is actually the injection runner which is part of the injection process *for*

introducing molten metal into the mold” (emphasis added). The Applicant agrees with this characterization. However, the Applicant points out that the injection sleeve or runner 180 does not constitute the mold itself, but is instead a separate element that is used “for introducing molten metal into the mold”. Indeed, the mold is clearly depicted in Figure 13 as element 60, with element 60a comprising a shaped part formed within the mold 60. As also illustrated in Figure 13, the semi-solid material M₂ formed in the vessel 30 is not fed from the vessel 30 directly into the die mold 60, but is instead transferred from the forming vessel 30 into the injection sleeve 180 via gravity feed, and is then fed from the injection sleeve 180 into the die mold 60.

Independent claim 50 recites that molten metal is transferred into the temperature-controlled vessel wherein semi-solid material is formed. The semi-solid material from the temperature-controlled vessel is then fed directly into the mold wherein the semi-solid material is formed into a shaped article within the mold. This process is clearly shown in Figure 9 of the subject application, where semi-solid material S is formed in the temperature-controlled vessel 80, which is in turn fed directly into the mold 90 to form a shaped article. Notably, the functions associated with forming the semi-solid material and feeding the semi-solid material into the mold are performed by a single, integrated structure such that the semi-solid material may be formed within the temperature-controlled vessel 80 and injected therefrom directly into the die mold 90. Referring once again to the ‘406 application, the metal M₂ is formed within the forming vessel 30, is transferred from the forming vessel 30 into the injection runner or sleeve 180, and is then fed from the sleeve 180 into the die mold

60. The process disclosed in the '406 application is therefore significantly different from that recited in independent claim 50.

The Applicant submits that independent claim 50 is therefore clearly distinguishable over the '406 application and any of the other art of record, whether considered along or in combination. Accordingly, withdrawal of the rejection of independent claim 50 is respectfully requested. Dependent claims 51-57 and 77-84 depend for independent claim 50 and are patentable for at least the reasons supporting the patentability of independent base claim 50.

The Applicant also submits that the subject matter recited in dependent claim 51 is also clearly distinguishable from the process disclosed in the '406 application. Specifically, dependent claim 51 recites that the temperature-controlled vessel within which the semi-solid material is formed includes a passage for receiving the metallic melt and a ram displaceable along the passage for feeding then semi-solid material directly into the mold. The Applicant points out that the '406 application fails to teach or even suggest that the forming vessel 30 within which the semi-solid material is formed includes the features recited in dependent claim 51. While the injection runner or sleeve 180 may include these features, the injection sleeve 180 is clearly not temperature-controlled to produce the semi-solid material. To the contrary, formation of the semi-solid material occurs within the temperature-controlled vessel 30.

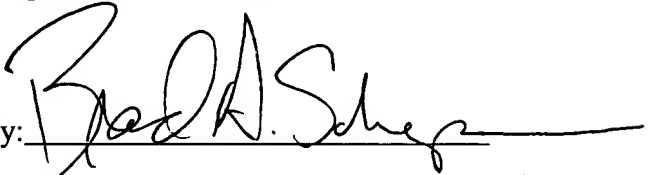
CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that Applicant's application is now in condition for allowance with now pending claims 1, 5-20, 24-26, 50-57, 66-74 and 76-84.

Reconsideration of the present application, as amended, is respectfully requested.

Timely action towards a Notice of Allowability is hereby solicited. The Examiner is encouraged to contact the undersigned by telephone to resolve any outstanding matters concerning the present application.

Respectfully submitted,

By: 

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